

ABSTRACT OF THE DISCLOSURE

A smart camera system provides focused images to an operator at a host computer by processing digital images at the imaging location prior to sending them to the host computer. The smart camera has a resident digital signal processor for preprocessing digital images prior to transmitting the images to the host. The preprocessing includes image feature extraction and filtering, convolution and deconvolution methods, correction of parallax and perspective image error and image compression. Compression of the digital images in the smart camera at the imaging location permits the transmission of very high resolution color or high resolution grayscale images at real-time frame rates such as 30 frames per second over a high speed serial bus to a host computer or to any other node on the network, including any remote address on the Internet.